

Article

On Generation And Propagation Of Acoustic Surface Waves Over Rough, Periodic Surfaces

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Abstract:

An acoustic surface wave is an evanescent wave that spreads cylindrically along the surface but decays exponentially with height above the surface. This wave travels at a little less than the speed of sound in air and is primarily related to the pore or surface. Surface waves are generated also when sound propagates over rough hard surface. This phenomenon is related to coherent multiple scattering from roughness elements. This paper investigates conditions under which surface waves are generated and propagated and the relationship between this surface wave frequency and the geometry are explored by measurements of the sound field due to a point source above periodically-spaced rigid strips placed on a rigid surface and by a Boundary Element Method in time-domain.